



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/433,499	11/03/1999	WILLIAM P. BROWN	P99.2275	2643

29176 7590 02/04/2003

BELL, BOYD & LLOYD LLC
P. O. BOX 1135
CHICAGO, IL 60690-1135

EXAMINER

RIOS CUEVAS, ROBERTO JOSE

ART UNIT PAPER NUMBER

2836

DATE MAILED: 02/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/433,499

Applicant(s)

BROWN ET AL.

Examiner

Roberto J Rios

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 19-25 and 28-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 19-25, and 28-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☒ Interview Summary (PTO-413) Paper No(s). 15.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of rows of axial fuses must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-7, 19-25, and 28-34 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification at the time the application was filed.

Claim 1 recites a "*plurality of rows of axial fuses*". The specification is silent regarding the fuse box comprising a plurality of rows of axial fuses and that a single row of fuses is shown for convenience and to clearly illustrate the present invention. In addition, the Figures fail to show said plurality of rows of axial fuses. This limitation is considered to be new matter not disclosed in the original specification as filed.

4. The following art rejection will be made as best understood by the Examiner in light of the above 35 USC 112 rejections.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US patent 3,905,013).

As per claim 1, Lee teaches a fuse arrangement for a vehicle comprising a wiring terminal having a plurality of discrete circuits extending therefrom (Figure 3); a common bus assembly (Bf); and a plurality of rows of axial fuses (Figure 3) used in the vehicle and disposed between the plurality of circuits in the wiring terminal and the common bus assembly (Bf), the common bus assembly so configured and arranged to contact the fuses in the rows to thereby connect electrically to the plurality of discrete circuits (Figure 3).

As per claim 3, Lee teaches the fuse comprising two male terminals configured to mate with two respective female terminals portions within the wiring terminal and the common bus assembly (Figure 3).

As per claim 5, Lee teaches the common bus assembly further comprising a common bus having a plurality of fuse terminals connections (Cf1) extending therefrom, the common bus and plurality of fuse terminal connections being disposed in a single enclosure (Figure 3).

As per claim 6, Lee teaches the wiring terminal including a plurality of discrete circuits that are, in turn, connected to respective electrical loads protected by a fuse (Figure 3).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Mobley et al (US patent 4,842,534).

As per claim 4, Lee does not specifically disclose the axial fuses comprising female terminals. However, Mobley et al (herein after Mobley) teaches a vehicle fuse/bus bar assembly, wherein said bus bar assembly may comprise male or female terminals for use with a fuse having legs of corresponding **mating design**. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to selectively use a fuse having female or male terminals depending on the corresponding mating design of said fuse/ bus assembly.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Kondo et al (US patent 5,823,819).

As per claim 7, Lee does not specifically disclose the fuse box housing comprising, at least in part, of a thermally conductive material for heat dissipation. However, Kondo et al (herein after Kondo) teaches a junction box comprising fuses and heat radiating components, wherein the housing comprises, at least in part, of a thermally conductive material for heat dissipation (col. 2, line 26).

Art Unit: 2836

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Kondo such that a housing comprising at least partially of a thermally conductive material is provided for the purpose of preventing temperature rise within the fuse box.

10. Claims 2, 19-23, 25, 28, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Lyman (US patent 2,496,732).

As per claims 2, 19, 20 and 22, Lee teaches a fuse box arrangement for a vehicle comprising a fuse box having a base (F), a common bus terminal (Bf) mounted in said base connected to a voltage supply, a plurality of wire terminals (Cf2) mounted in said base, each connected to a discrete circuit; and a fuse array having a plurality of fuses (f) used in the vehicle, the fuses electrically connecting the common bus terminal with the discrete circuits (Figure 3). Lee does not specifically disclose the common bus terminal affixed to a cover and being completely translationally removed from and translationally reinserted onto the plurality of fuses. However, Lyman teaches a fuse box comprising a fuse arrangement (45) within a base (B) and a cover (A), wherein a supply terminal (40) located in said base is completely translationally removed from and translationally reinserted onto the plurality of fuses (Figure 6; col. 4, lines 11-71).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Lyman such that the fuse box comprises a common bus terminal located in a cover that is translationally removed and reinserted onto said fuses for the purpose of breaking or disconnecting the contacts between the voltage supply terminal and the discrete circuits.

Art Unit: 2836

As per claim 21, Lee teaches the plurality of wire terminals affixed to the base (Figure 3).

As per claim 23, Lee teaches the wiring terminals affixed to the base but does not specifically disclose the wiring terminals affixed the cover. However, Lyman teaches a fuse box, wherein a plurality of wiring terminals is affixed to a cover (Figure 6, col.4, line 18+).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Lyman such that the plurality of wire terminals is affixed to cover for the purpose of quickly disconnecting the discrete circuits from the voltage supply.

As per claim 25, Lee teaches the common bus terminal comprising a plurality of contact terminals (Cf1) that are configured to connect to first terminals of each of the plurality of fuses within the fuse array, wherein the common bus terminal is configured to simultaneously connect all of the contact terminal therein with the first terminal of each of the fuses when connecting the common bus terminal to the first terminals (Figure 3). Moreover, Lyman teaches the voltage supply terminal simultaneously connecting all of the contact terminals therein with a first terminal of each of the fuses when connecting the supply voltage terminal to said first terminals (Figure 6, col. 4, line 64).

As per claim 28, Lee teaches a fuse box for a vehicle comprising a base, a common bus terminal that attaches to said base, and a plurality of fuses used in the vehicle but does not specifically disclose the common bus terminal affixed to a cover and being completely removed with respect to the base. However, Lyman teaches a

Art Unit: 2836

fuse box comprising a fuse arrangement (45) within a base (B) and a cover (A), wherein a supply terminal (40) located in said base is completely removed with respect to the base, wherein the plurality of fuses are housed between the base and the cover (Figure 6; col. 4, lines 11-71).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Lyman such that the fuse box comprises a common bus terminal located in a cover that is removed with respect to the base for the purpose of breaking or disconnecting the contacts between the voltage supply terminal and the discrete circuits.

As per claims 33 and 34, Lee teaches the fuses comprising axial fuses.

11. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Hatagishi (US patent 5,227,759).

Lee teaches the fuse box comprising an axial fuse (F) but does not specifically disclose the claimed fuse configuration. However, Hatagashi teaches an axial fuse comprising a planar, electrically insulating substrate having at least two planar sides (25); a metallization pattern (30) disposed on at least one side of the planar substrate, said metallization pattern comprising at least one fuse element; a protective coating (27) disposed on at least a respective portion of at least one side of the planar substrate and covering at least a first portion of the metallization pattern; and a second portion of the metallization pattern that is not covered by the protective coating configured as a contact portion (Figures 1, 2; col.2, line 41-col. 3, line 15).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute Lee's fuse with Hatagishi's fuse for the purpose of

preventing any damage to the fuse terminals and improve conductivity between the fuse and the male terminals.

12. Claims 29, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Schmitt (US patent 4,706,059).

As per claims 29 and 30, Lee teaches the fuse assembly comprising a plurality of fuses but does not specifically disclose the fuses stored on a roll of fuses including a flexible carrier strip and having indexing apertures associated with said fuses.

However, Schmitt teaches a plurality of axial fuses (2) stored on flexible carrier strip roll (1), wherein indexing perforations are provided to facilitate separating the fuses from the roll (col.2, line 64).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Schmitt such that the plurality of fuses is stored on a roll including a flexible carrier strip having indexing apertures for the purpose of eliminating the possibility of making mistakes when replacing fuses and assuring installation of said fuses in their proper sequence.

As per claim 32, lee teaches individually connecting the fuses to the common bus but does not specifically disclose the fuses positioned on a substrate so as to mate with a terminal arrangement defined by the common bus. However, Schmitt teaches a fuse arrangement comprising a plurality of fuses (2) positioned on a substrate (1) so as to mate with a terminal arrangement (17).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Lee with the teachings of Schmitt such that the plurality of fuses is positioned on a substrate so as to mate with a terminal

Art Unit: 2836

arrangement defined by the common bus terminal for the purpose of eliminating the possibility of making mistakes when replacing fuses and assuring installation of said fuses in their proper sequence.

13. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al in view of Perreault et al (US patent 5,095,297).

Lee teaches the fuse box comprising an axial fuse but does not specifically disclose the claimed fuse configuration. However, Perreault et al (herein after Perreault) teach an axial fuse comprising an insulating substrate (18); a metallization pattern (20) disposed on said substrate, and a protective coating (30) covering at least a portion of the metallization pattern (Figures 1-3).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute Lee's fuse with Perreault's fuse for the purpose of ensuring good support for the substrate and avoiding damaging the fuse during manufacture and use.

14. Art of general nature relating to fuses has been cited for applicant's review.

Response to Arguments

15. Applicant's arguments with respect to claims 1-7, 19-25 and 28-34 have been considered but are moot in view of the new ground(s) of rejection.


16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2836

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication with PTO

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rios whose telephone number is (703) 306-5518. In the event that Examiner Rios cannot be reached, his supervisor, Brian Sircus may be contacted at (703) 308-3119. The fax number for Before-Final communications is (703) 872-9318, for After-Final communications is (703) 872-9319, and for Customer Service is (703) 872-9317.



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Roberto J. Rios
Patent Examiner